

City of Holyoke Retirement System

*Actuarial Valuation and Review
as of January 1, 2005*

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May 13, 2005

*City of Holyoke Retirement System
20 Korean Veterans Plaza, Room 207
Holyoke, MA 0104*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2005. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2006 and later years and analyzes the preceding two years' experience.

The census information and financial information on which our calculations were based was prepared by the staff of the Holyoke Retirement System. That assistance is gratefully acknowledged. The actuarial calculations were completed under my supervision.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By:

*Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary*

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SECTION 1: Valuation Summary for the City of Holyoke Retirement System

Purpose

This report has been prepared by The Segal Company to present a valuation of the City of Holyoke Retirement System as of January 1, 2005. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of M.G.L. Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2005;
- The assets of the Plan as of December 31, 2004;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The actuarial valuation report as of January 1, 2005 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
- During the plan years ended 2003 and 2004, the market value rate of return was 20.92% and 8.26%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations over a four-year period, the actuarial rates of return for the plan years ended 2003 and 2004 were 3.94% and 4.24%, respectively. The actuarial value of assets as of December 31, 2004 was \$154.6 million, or 99.5% of the market value of assets of \$155.5 million.
- The unfunded liability has increased from \$70.4 million as of January 1, 2003 to \$93.7 million as of January 1, 2005. The increase is due to an investment loss of \$12.9 million, the 2003 ERI liability and Section 90 ACD increases of \$4.7 million, a change in the assumptions described below and a miscellaneous loss.
- The prior actuarial valuation did not include an assumption for accidental disability retirees who will die from the same cause as their disability and whose beneficiaries will receive an accidental death benefit. We recommend an assumption that 40% of the accidental disability retirees will die from the same cause as the disability leaving an accidental death beneficiary. This assumption change increases the unfunded liability by \$2.2 million.

SECTION 1: Valuation Summary for the City of Holyoke Retirement System

- The preliminary recommended contribution for fiscal 2006 is \$11,495,297. This is based on a 15-year level dollar amortization of the 2003 ERI liability and a 20-year level dollar amortization of all other unfunded liabilities (2002 ERI, fiscal 2004 and 2005 Section 90 ACD increases, and the remaining unfunded liability). Because fiscal 2006 has already been budgeted at \$10,061,673, the increase will first be reflected in the fiscal 2007 appropriation of \$11,704,521.

SECTION 1: Valuation Summary for the City of Holyoke Retirement System

Summary of Key Valuation Results

	2005	2003
Contributions:		
Recommended for fiscal 2006 and 2004	\$10,061,673	\$8,972,351
Recommended for fiscal 2007 and 2005	11,704,521	9,473,610
Funding elements for plan year beginning January 1:		
Normal cost	\$5,923,881	\$5,769,912
Market value of assets	155,466,851	123,195,216
Actuarial value of assets	154,649,632	147,834,259
Actuarial accrued liability	248,324,816	218,195,543
Unfunded actuarial accrued liability	93,675,184	70,361,284
GASB 25/27:		
Annual required contributions	\$10,061,673	\$8,972,351
Actual contributions	- -	8,972,351
Percentage contributed	--	100.00%
Funded ratio	62.28%	67.75%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	947	875
Number of inactive participants	221	234
Number of active participants	1,319	1,429
Total payroll	\$46,177,102	\$45,373,511
Average payroll	35,009	31,752

SECTION 2: Valuation Results for the City of Holyoke Retirement System

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past three valuations can be seen in this chart.

CHART 1
Participant Population: 2000 – 2004

Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries
2000	1,410	182	860
2002	1,429	234	875
2004	1,319	221	947

SECTION 2: Valuation Results for the City of Holyoke Retirement System

Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 1,319 active participants with an average age of 44.3, average years of service of 10.4 years and average payroll of \$35,009. The 1,429 active participants in the prior valuation had an average age of 44.5, average service of 10.3 years and average payroll of \$31,752.

Among the active participants, there were none with unknown age and/or service information.

Inactive Participants

In this year's valuation, there were 221 participants with a vested right to a deferred or immediate vested benefit or entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2

Distribution of Active Participants by Age as of December 31, 2004

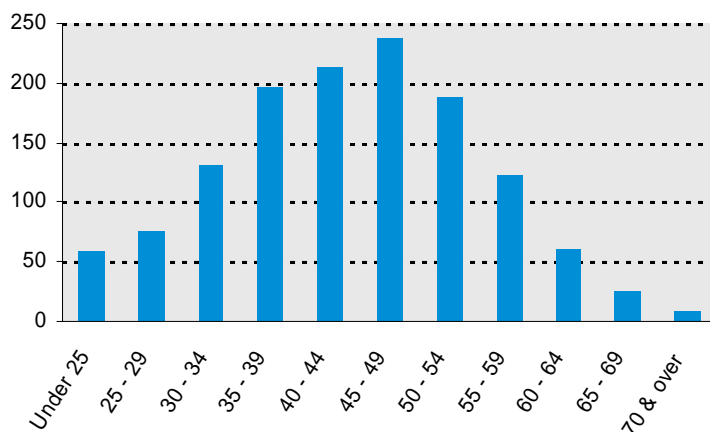
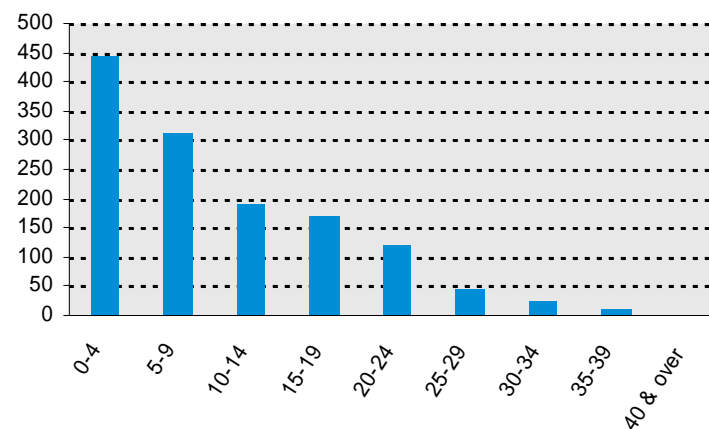


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2004



SECTION 2: Valuation Results for the City of Holyoke Retirement System

Retired Participants and Beneficiaries

As of December 31, 2004, 760 retired participants and 187 beneficiaries were receiving total monthly benefits of \$1,340,263 excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 763 retired participants and 112 beneficiaries receiving monthly benefits of \$1,083,080, excluding COLAs reimbursed by the Commonwealth.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2004

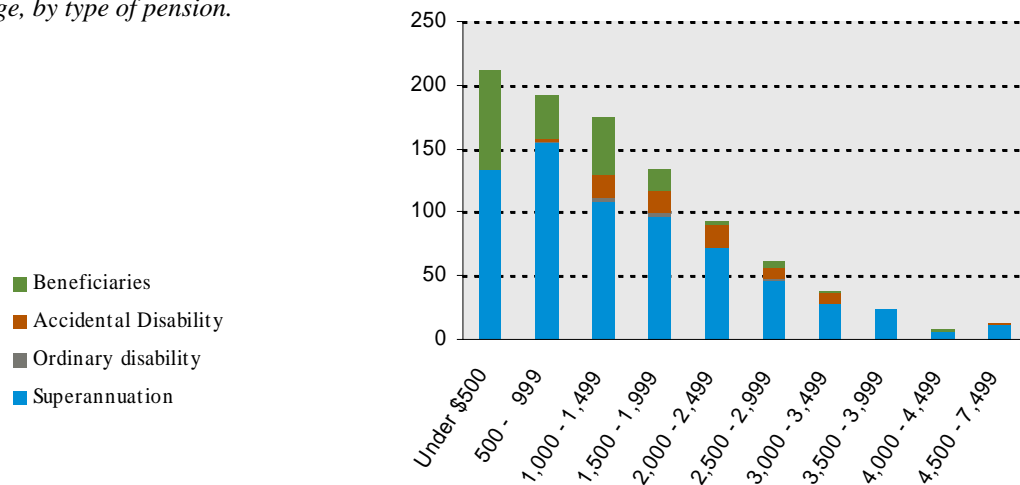
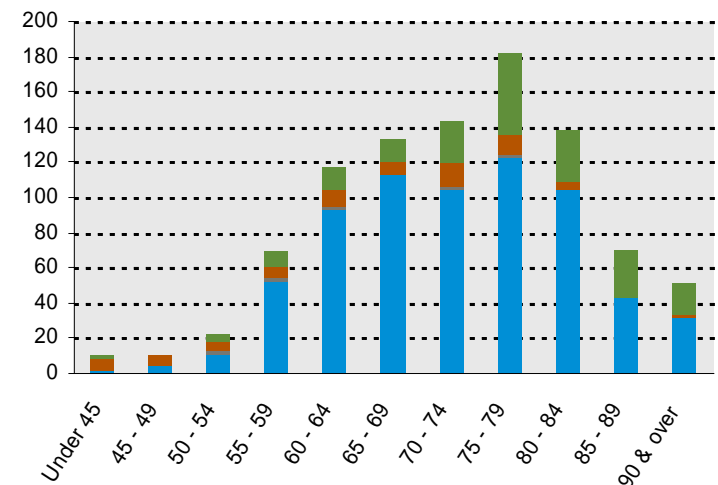


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2004



SECTION 2: Valuation Results for the City of Holyoke Retirement System

B. FINANCIAL INFORMATION

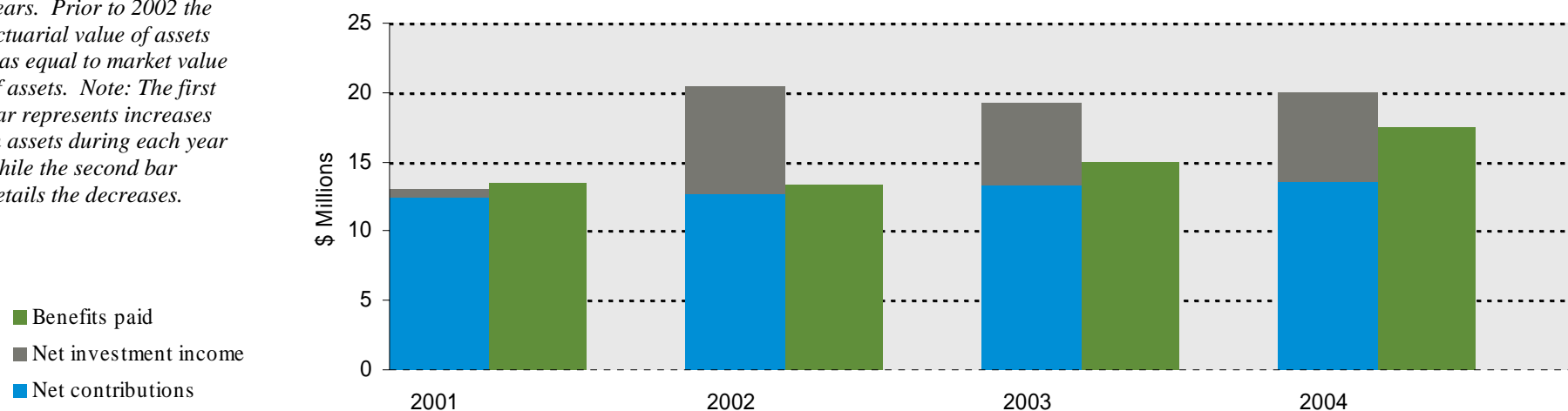
Retirement plan funding anticipates that, over the long term, both net contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

The chart depicts the components of changes in the actuarial value of assets over the last four years. Prior to 2002 the actuarial value of assets was equal to market value of assets. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 2001 – 2004



SECTION 2: Valuation Results for the City of Holyoke Retirement System

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets

	Year Ended	
	December 31, 2004	December 31, 2003
1. Market value of assets	\$155,466,851	\$147,252,102
2. Calculation of unrecognized return*	Original <u>Amount</u>	Unrecognized <u>Return</u>
(a) Year ended December 31, 2004	\$12,331	N/A
(b) Year ended December 31, 2003	15,516,090	11,637,067
(c) Year ended December 31, 2002	-27,800,297	-13,900,149
(d) Year ended December 31, 2001	-10,243,951	<u>N/A</u>
(e) Total unrecognized return	817,219	-4,824,069
3. Preliminary actuarial value: (1) - (2e)	154,649,632	152,076,171
4. Adjustment to be within 20% corridor	0	0
5. Final actuarial value of assets: (3) + (4)	<u>\$154,649,632</u>	<u>\$152,076,171</u>
6. Actuarial value as a percentage of market value: (5) ÷ (1)	99.5%	103.3%

* Unrecognized return is the difference between the total return and the expected return on a market value basis and is recognized over a four-year period.

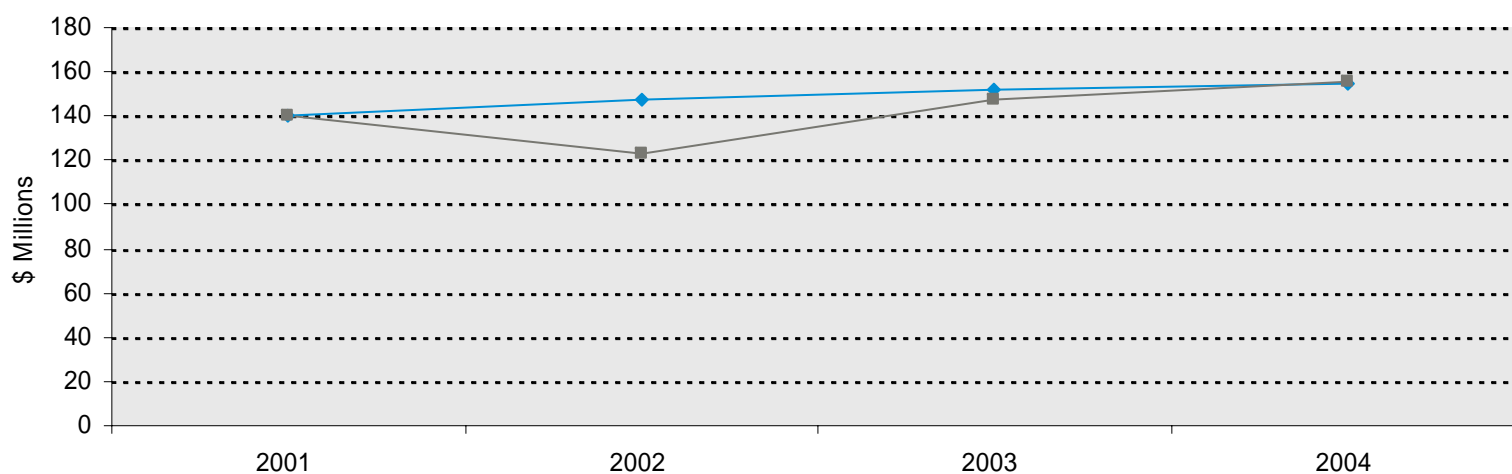
SECTION 2: Valuation Results for the City of Holyoke Retirement System

Both the actuarial value and market value of assets are representations of the Holyoke Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Holyoke Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past four years. Prior to 2002 actuarial value of assets was equal to market value of assets.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2001 – 2004



SECTION 2: Valuation Results for the City of Holyoke Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss over the two-year period is \$24,897,311. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience over the past two years.

CHART 9

Actuarial Experience for Two-Year Period Ended December 31, 2004

1. Net loss from investments*	-\$12,880,907
2. Net loss from other experience**	<u>-12,016,404</u>
3. Net experience loss: (1) + (2)	-\$24,897,311

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the City of Holyoke Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Holyoke Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. The actual rate of return on an actuarial basis for the 2004 plan year was 4.24% and 3.94% for the 2003 year.

Since the actual return for the year was less than the assumed return, the Holyoke Retirement System experienced an actuarial loss during the two-year period ending December 31, 2004 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10
Actuarial Value Investment Experience

	Year Ended	
	December 31, 2004	December 31, 2003
1. Actual return	\$6,363,022	\$5,800,431
2. Average value of assets	150,181,390	147,055,000
3. Actual rate of return: (1) ÷ (2)	4.24%	3.94%
4. Assumed rate of return	8.25%	8.25%
5. Expected return: (2) x (4)	\$12,389,964	\$12,132,038
6. Actuarial gain/(loss): (1) – (5)	<u>-\$6,026,942</u>	<u>-\$6,331,607</u>

SECTION 2: Valuation Results for the City of Holyoke Retirement System

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last four years, including an average return over that period.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 8.25%.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2001 - 2004

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2001	\$686,076	0.49%	\$686,076	0.49%
2002	7,776,013	5.54	-16,863,029	-12.02
2003	5,800,431	3.94	25,615,406	20.92
2004	<u>6,363,023</u>	4.24	<u>12,004,310</u>	8.26
Total	\$20,625,543		\$21,442,762	
	Four-year average return	3.57%		3.91%

*Notes: Each year's yield is weighted by the average asset value in that year.
An asset smoothing method was adopted in 2002.*

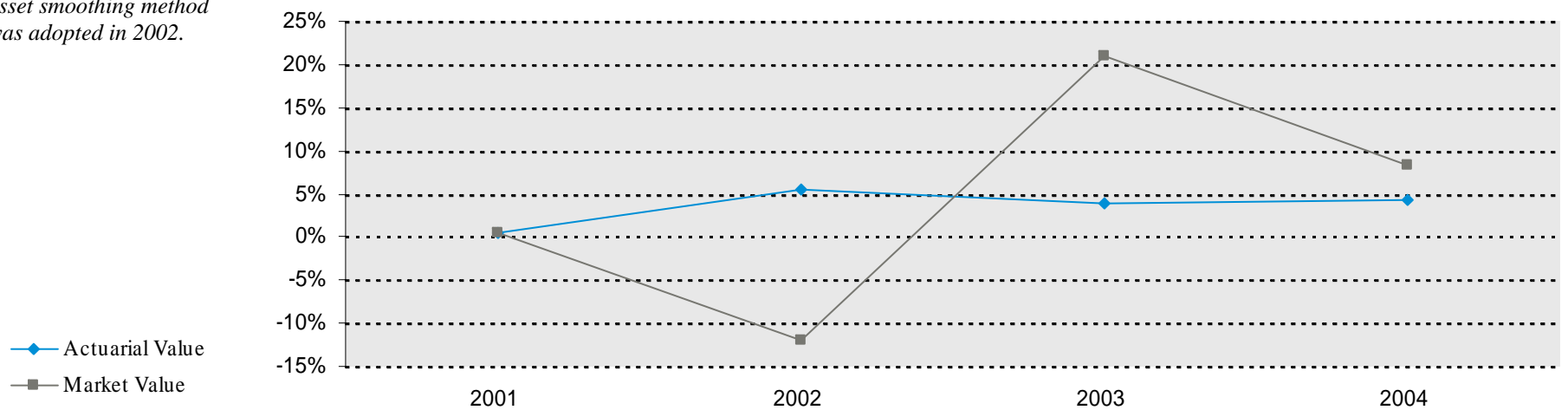
SECTION 2: Valuation Results for the City of Holyoke Retirement System

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2001 - 2004. An asset smoothing method was adopted in 2002.

CHART 12

Market and Actuarial Rates of Return for Years Ended December 31, 2001 - 2004



SECTION 2: Valuation Results for the City of Holyoke Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the two-year period ending December 31, 2004 amounted to (\$12,016,404). The portion of the loss excluding the 2003 ERI liability and the 2004 and 2005 Section 90 ACD increases is \$7,314,453 or 2.9% of the actuarial accrued liability. Detail is shown in the chart below.

With this valuation, we recommend adding an assumption that 40% of the accidental disability retirees will die from the same cause as the disability leaving an accidental death beneficiary. This change will increase the unfunded liability by \$2,160,319.

The chart shows elements of the experience gain/(loss) for the most recent years.

CHART 13

Experience Due to Changes in Demographics for Two-Year Period Ended December 31, 2004

1. 2003 ERI liability	-\$4,036,482
2. 2004 and 2005 Section 90 ACD increases	-665,469
3. Miscellaneous loss	<u>-7,314,453</u>
4. Total	-\$12,016,404

SECTION 2: Valuation Results for the City of Holyoke Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The preliminary recommended contribution for fiscal 2006 is \$11,495,297. This is based on a 15-year level dollar amortization of the 2003 ERI liability and a 20-year level dollar amortization of all other unfunded liabilities (2002 ERI, fiscal 2004 and 2005 Section 90 ACD increases, and the remaining unfunded liability). Because fiscal 2006 has already been budgeted at \$10,061,673, the increase will

first be reflected in the fiscal 2007 appropriation of \$11,704,521.

Exhibit G in Section 3 shows the recommended contributions through fiscal 2028 based on this funding schedule.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 14
Recommended Contribution

	Year Beginning January 1			
	2005		2003	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$5,923,881	12.47%	\$5,769,912	12.35%
2. Expected employee contributions	<u>-4,080,451</u>	<u>-8.59%</u>	<u>-3,591,260</u>	<u>-7.68%</u>
3. Employer normal cost: (1) + (2)	\$1,843,430	3.88%	\$2,178,652	4.66%
4. Actuarial accrued liability	248,324,816		218,195,543	
5. Actuarial value of assets	<u>154,649,632</u>		<u>147,834,259</u>	
6. Unfunded actuarial accrued liability: (4) - (5)	\$93,675,184		\$70,361,284	
7. Employer normal cost projected to July 1, 2005 and 2003, adjusted for timing*	1,908,325	3.96%	2,312,112	4.88%
8. Projected unfunded actuarial accrued liability	97,462,715		73,206,174	
9. Payment on projected unfunded actuarial accrued liability, adjusted for timing*	9,586,972	19.88%	6,896,535	14.54%
10. Preliminary recommended contribution: (7) + (9), adjusted for timing*	11,495,297	23.84%	9,208,647	19.42%
11. Budgeted appropriation	<u>\$10,061,673</u>	<u>20.87%</u>	<u>\$8,972,351</u>	<u>18.92%</u>
12. Projected payroll	\$48,222,434		\$47,430,557	

*Recommended contributions are assumed to be paid on July 1 and December 31.

SECTION 2: Valuation Results for the City of Holyoke Retirement System

The recommended contribution is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15

Reconciliation of Recommended Contribution from July 1, 2003 to July 1, 2005

Budgeted Appropriation for fiscal 2004	\$8,972,351
Expected increase for July 1, 2005 appropriation	\$622,622
Effect of investment loss	1,310,225
Effect of 2003 Early Retirement incentive	466,700
Effect of 2003 and 2004 Section 90 increases	67,690
Effect of change in the actuarial assumptions	222,491
Effect of net other changes	<u>(166,782)</u>
Total	\$2,522,946
Preliminary Recommended Contribution for fiscal 2006	\$11,495,297
Budgeted Appropriation for fiscal 2006	\$10,061,673

SECTION 2: Valuation Results for the City of Holyoke Retirement System

E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 16 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the

actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

Although GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 17 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 16
Required Versus Actual Contributions

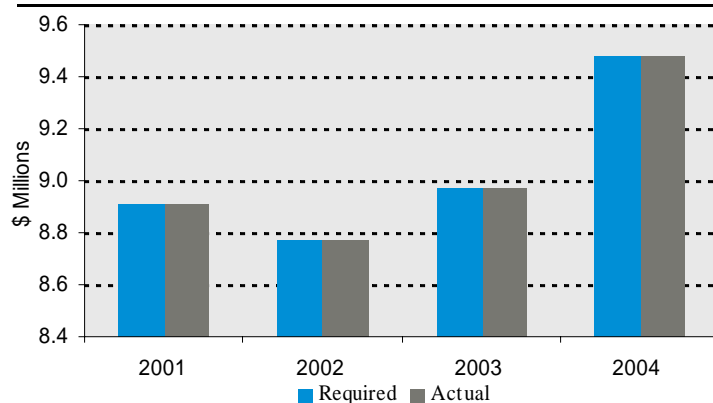
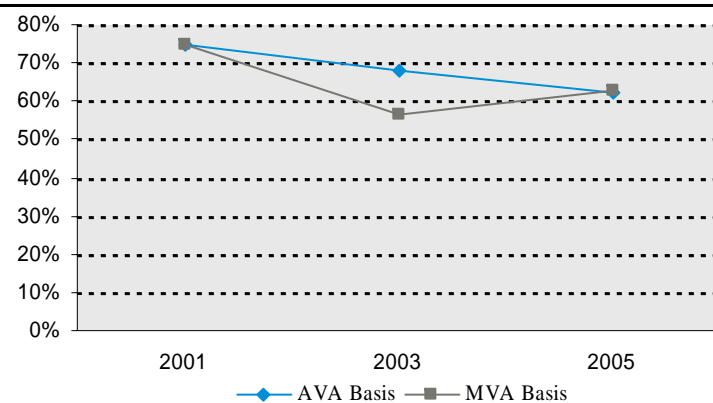


CHART 17
Funded Ratio



SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT A

Table of Plan Coverage

	Year Ended December 31		Change From Prior Year
Category	2004	2002 ¹	
Active participants in valuation:			
Number	1,319	1,429	-7.7%
Average age	44.3	44.5	N/A
Average service	10.4	10.3	N/A
Total payroll	\$46,177,102	\$45,373,511	1.8%
Average payroll	35,009	31,752	10.3%
Account balances	34,808,906	N/A	N/A
Inactive participants with right to a return of their contributions or a deferred or immediate benefit			
	221	234	-5.6%
Retired participants:			
Number in pay status	680	684	-0.6%
Average age	72.6	N/A	N/A
Average monthly benefit	\$1,489	\$1,231	21.0%
Disabled participants:			
Number in pay status	80	79	1.3%
Average age	63.7	N/A	N/A
Average monthly benefit	\$1,974	\$1,774	11.3%
Beneficiaries in pay status	187	112	67.0%

¹ Results for 2002 were taken from the January 1, 2003 valuation report prepared by the prior actuary.

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT B

Participants in Active Service as of December 31, 2004 By Age, Years of Service, and Average Payroll

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	59	57	2	--	--	--	--	--	--	--
	\$21,693	\$21,181	\$36,291	--	--	--	--	--	--	--
25 – 29	76	61	15	--	--	--	--	--	--	--
	\$26,893	\$26,688	\$27,727	--	--	--	--	--	--	--
30 – 34	131	72	46	12	1	--	--	--	--	--
	\$32,338	\$29,698	\$32,722	\$47,778	\$19,488	--	--	--	--	--
35 – 39	197	74	68	34	20	1	--	--	--	--
	\$34,777	\$29,547	\$33,042	\$47,102	\$39,349	\$29,253	--	--	--	--
40 – 44	213	48	59	47	42	17	--	--	--	--
	\$37,222	\$25,502	\$29,574	\$40,760	\$48,015	\$60,410	--	--	--	--
45 – 49	238	56	51	39	37	43	12	--	--	--
	\$37,713	\$33,186	\$29,619	\$34,572	\$40,072	\$50,818	\$49,215	--	--	--
50 – 54	188	38	35	26	32	26	23	8	--	--
	\$37,175	\$29,701	\$30,829	\$27,798	\$30,866	\$46,921	\$60,975	\$56,053	--	--
55 – 59	123	21	22	19	22	20	4	11	4	--
	\$40,167	\$36,285	\$28,104	\$30,156	\$34,148	\$42,994	\$56,075	\$69,964	\$95,578	--
60 – 64	60	14	8	9	10	10	2	3	4	--
	\$34,827	\$27,674	\$28,427	\$30,784	\$33,453	\$34,913	\$37,915	\$64,990	\$60,807	--
65 – 69	26	5	4	5	5	2	2	2	--	1
	\$27,244	\$20,728	\$31,167	\$20,091	\$31,212	\$21,933	\$23,610	\$42,240	--	\$47,970
70 & over	8	--	2	1	1	--	1	1	2	--
	\$16,828	--	\$15,034	\$13,946	\$19,138	--	\$10,788	\$14,771	\$22,956	--
Total	1,319	446	312	192	170	119	44	25	10	1
	\$35,009	\$28,305	\$30,691	\$37,115	\$38,556	\$48,019	\$53,435	\$60,490	\$67,145	\$47,970

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT C

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2004	Year Ended December 31, 2003
Contribution income:		
Employer contributions	\$9,473,610	\$8,972,351
Employee contributions	3,974,742	4,315,286
Federal Grant reimbursement and other contributions	<u>163,739</u>	<u>86,547</u>
Net contribution income	\$13,612,091	\$13,374,184
Net investment income:	<u>6,363,022</u>	<u>5,800,431</u>
Total income available for benefits	\$19,975,113	\$19,174,615
Less benefit payments:		
Pensions	-\$16,318,158	-\$14,010,689
Net 3(8)(c) reimbursements	-222,349	-132,634
Refunds, annuities, and Option B refunds	<u>-861,145</u>	<u>-789,382</u>
Net benefit payments	-\$17,401,652	-\$14,932,703
Change in reserve for future benefits	\$2,573,461	\$4,241,912

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2004

Year Ended December 31	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return*	Benefit Payments	Actuarial Value of Assets at End of Year
2000	N/A	N/A	N/A	N/A	N/A	\$140,947,847
2001	\$8,905,623	\$3,496,860	\$12,386	\$686,076	\$13,453,568	140,595,224
2002	8,770,675	3,850,576	95,540	7,776,013	13,253,769	147,834,259
2003	8,972,351	4,315,286	86,547	5,800,431	14,932,703	152,076,171
2004	9,473,610	3,974,742	163,739	6,363,022	17,401,652	154,649,632

** Net of investment fees and administrative expenses. Reflects change in assets method in 2002.*

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT E

Development of Unfunded Actuarial Accrued Liability

	Year Ended	
	December 31, 2004	December 31, 2003
1. Unfunded actuarial accrued liability at beginning of year	\$68,554,262	\$70,361,284
2. Normal cost at beginning of year	6,029,558	5,769,912
3. Total contributions	-13,612,091	-13,374,184
4. Interest		
(a) For whole year on (1) + (2)	\$6,153,165	\$6,280,824
(b) For half year on (3)	<u>-507,341</u>	<u>-483,573</u>
(c) Total interest	<u>5,645,824</u>	<u>5,797,251</u>
5. Expected unfunded actuarial accrued liability	\$66,617,554	\$68,554,262
6. Changes due to:		
(a) Investment loss	\$12,880,907	--
(b) Miscellaneous loss	7,314,453	--
(c) 2004 and 2005 Section 90 ACD increases	665,469	--
(d) 2003 ERI liability	4,036,482	--
(e) Disability assumption revision	<u>2,160,319</u>	<u>--</u>
(f) Total changes	<u>27,057,630</u>	<u>--</u>
7. Unfunded actuarial accrued liability at end of year	<u>\$93,675,184</u>	

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT F

Table of Amortization Bases as of July 1, 2005

Type	Annual Payment*	Years Remaining	Outstanding Balance
2002 ERI	\$40,454	20.00	\$413,786
2003 ERI	466,700	15.00	4,175,462
FY04-05 Section 90 ACD liability	67,690	20.00	692,316
Remaining unfunded liability	<u>9,012,128</u>	20.00	<u>92,181,091</u>
Total	\$9,586,972		\$97,462,715

Notes: Payments are adjusted for timing.

Does not reflect adjustment to set fiscal 2006 appropriation to budgeted amount.

Refer to Exhibit G for information on payments in fiscal year 2007 and later.

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT G

Funding Schedule

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 2002 ERI Liability	(4) Amortization of 2003 ERI Liability	(5) Amortization of FY04-05 Section 90 ACD Liability	(6) Amortization of Remaining Unfunded Liability	(7) Total Plan Cost: (2) + (3) + (4) + (5) + (6)	(8) Total Unfunded Actuarial Accrued Liability
2006	\$1,908,325	\$40,454	\$466,700	\$67,690	\$7,578,504	\$10,061,673	\$97,462,715
2007	1,965,575	40,454	466,700	67,690	9,164,102	11,704,521	96,850,585
2008	2,044,198	40,454	466,700	67,690	9,164,102	11,783,144	94,505,225
2009	2,125,966	40,454	466,700	67,690	9,164,102	11,864,912	91,966,373
2010	2,211,005	40,454	466,700	67,690	9,164,102	11,949,951	89,218,066
2011	2,299,445	40,454	466,700	67,690	9,164,102	12,038,391	86,243,023
2012	2,402,920	40,454	466,700	67,690	9,164,102	12,141,866	83,022,539
2013	2,511,051	40,454	466,700	67,690	9,164,102	12,249,997	79,536,365
2014	2,624,048	40,454	466,700	67,690	9,164,102	12,362,994	75,762,582
2015	2,742,130	40,454	466,700	67,690	9,164,102	12,481,076	71,677,462
2016	2,865,526	40,454	466,700	67,690	9,164,102	12,604,472	67,255,319
2017	2,994,475	40,454	466,700	67,690	9,164,102	12,733,421	62,468,350
2018	3,129,226	40,454	466,700	67,690	9,164,102	12,868,172	57,286,456
2019	3,270,041	40,454	466,700	67,690	9,164,102	13,008,987	51,677,055
2020	3,417,193	40,454	466,700	67,690	9,164,102	13,156,139	45,604,879
2021	3,570,967	40,454	-	67,690	9,164,102	12,843,213	39,031,748
2022	3,731,661	40,454	-	67,690	9,164,102	13,003,907	32,411,623
2023	3,899,586	40,454	-	67,690	9,164,102	13,171,832	25,245,338
2024	4,075,067	40,454	-	67,690	9,164,102	13,347,313	17,487,834
2025	4,258,445	40,454	-	67,690	9,164,102	13,530,691	9,090,336
2026	4,450,075	-	-	-	-	4,450,075	-
2027	4,650,328	-	-	-	-	4,650,328	-
2028	4,859,593	-	-	-	-	4,859,593	-

Notes: Recommended contributions are assumed to be paid on July 1 and December 31.

Assumes contribution of budgeted amount for fiscal year 2006.

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT H

Department Results

	Geriatric Authority	Water	Waste Water	Gas & Electric	Housing	All Other	Total
Active Participants							
Number	115	35	83	141	56	889	1,319
Projected annual payroll	\$3,079,139	\$1,355,885	\$2,777,479	\$7,985,897	\$2,564,965	\$29,751,611	\$47,514,976
Average age	41.9	46.8	47.6	45.0	42.9	44.1	44.3
Average service	6.5	16.8	9.8	11.0	11.2	10.5	10.4
Normal cost	\$370,714	\$107,900	\$318,568	\$1,275,871	\$232,911	\$3,617,917	\$5,923,881
Expected employee contributions	272,357	111,141	240,278	711,339	223,330	2,522,006	4,080,451
Employer normal cost	98,357	(3,241)	78,290	564,532	9,581	1,095,911	1,843,430
Accrued liability	3,960,123	3,437,457	4,418,104	16,717,744	4,597,831	66,964,541	100,095,800
Retired Participants							
Number	77	34	73	157	41	565	947
Total benefits	\$756,456	\$636,728	\$860,238	\$3,853,082	\$645,135	\$9,331,517	\$16,083,156
Average benefits	9,824	18,727	11,784	24,542	15,735	16,516	16,983
Accrued liability	7,827,588	6,133,657	7,817,189	34,925,846	6,157,361	82,488,456	145,350,097
Net 3(8)c liability							1,643,149
Inactive Participants							
Number	139	3	4	3	2	70	221
Accumulated contributions	\$253,711	\$113,637	\$53,435	\$81,980	\$85,563	\$647,444	\$1,235,770

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

EXHIBIT I

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Supplemental Information for the City of Holyoke Retirement System

Amortization of the Unfunded

Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the City of Holyoke Retirement System

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 187 beneficiaries in pay status)	947
2. Inactive participants with a vested right to a return of their contributions or a deferred or immediate benefit as of December 31, 2004	221
3. Participants active during the year ended December 31, 2004 with total accumulated contributions of \$34,808,906 and projected payroll of \$47,514,976	1,319

The actuarial factors as of the valuation date are as follows:

1. Normal cost	\$5,923,881
2. Expected employee contributions	<u>-4,080,451</u>
3. Employer normal cost: (1) + (2)	\$1,843,430
4. Actuarial accrued liability	248,324,816
Retired participants and beneficiaries	\$146,993,246 ¹
Active participants	100,095,800
Inactive participants	1,235,770
5. Actuarial value of assets (\$155,466,851 at market value)	154,649,632
6. Unfunded actuarial accrued liability: (4) – (5)	93,675,184

The actuarial factors projected to July 1, 2005 are as follows:

1. Employer normal cost projected to July 1, 2005, adjusted for timing ²	\$1,908,325
2. Projected unfunded actuarial accrued liability	97,462,715
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing ²	9,586,972
4. Preliminary recommended contribution: (1) + (3), adjusted for timing ²	<u>\$11,495,297</u>
5. Budgeted appropriation	10,061,673
6. Projected payroll	48,222,434

¹ Includes net 3(8)c liability of \$1,643,149.

² Recommended contributions are assumed to be paid on July 1 and December 31.

SECTION 4: Reporting Information for the City of Holyoke Retirement System

EXHIBIT II

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Plan Year Ended December 31	Annual Required Contributions	Actual Contributions	Percentage Contributed
2001	\$8,905,623	\$8,905,623	100.0%
2002	8,770,675	8,770,675	100.0%
2003	8,972,351	8,972,351	100.0%
2004	9,473,610	9,473,610	100.0%

SECTION 4: Reporting Information for the City of Holyoke Retirement System**EXHIBIT III****Supplementary Information Required by the GASB – Schedule of Funding Progress**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]
01/01/1992	\$51,663,549	\$113,248,628	\$61,585,079	45.62%	\$33,061,832	186.27%
01/01/1993	56,070,637	120,256,243	64,185,666	46.63%	31,545,779	203.47%
01/01/1996	77,942,408	125,981,224	48,038,816	61.87%	33,425,533	143.72%
01/01/1998	103,682,801	161,786,384	58,103,583	64.09%	40,572,345	143.21%
01/01/1999	124,672,189	180,215,921	55,543,732	69.18%	41,606,346	133.50%
01/01/2001	140,947,847	188,431,479	47,483,632	74.80%	41,123,979	115.46%
01/01/2003	147,834,259	218,195,543	70,361,284	67.75%	45,373,511	155.07%
01/01/2005	154,649,632	248,324,816	93,675,184	62.28%	47,514,976	197.15%

SECTION 4: Reporting Information for the City of Holyoke Retirement System

EXHIBIT IV

Supplementary Information Required by the GASB

Valuation date	January 1, 2005		
Actuarial cost method	Entry Age Normal Cost Method		
Amortization method	Level dollar amortization		
Remaining amortization period	As of January 1, 2005, 15 years for 2003 ERI and 20 years for remaining unfunded liability		
Asset valuation method	The difference between the expected return and the actual investment return on a market value basis is recognized over a four-year period as described by Revenue Procedure 2000-40.		
<hr/>			
Actuarial assumptions:			
Investment rate of return	8.25%		
Projected salary increases		<u>General Employees</u>	<u>Police and Fire Employees</u>
	2005 – 2006	3.00%	3.00%
	2007 – 2010	4.00%	4.00%
	2011+	4.75%	5.25%
Cost of living adjustments	3.00% of first \$12,000 of retirement income		
<hr/>			
Plan membership:			
Retired participants and beneficiaries receiving benefits	947		
Inactive participants	221		
Active participants	<u>1,319</u>		
Total	2,487		

SECTION 4: Reporting Information for the City of Holyoke Retirement System

EXHIBIT V

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table set forward 2 years

Termination Rates before Retirement:

Groups 1 and 2 - Rate (%)

Age	Mortality		Disability
	Male	Female	
20	0.03	0.02	0.02
25	0.04	0.02	0.02
30	0.04	0.03	0.03
35	0.08	0.05	0.06
40	0.11	0.07	0.10
45	0.15	0.11	0.15
50	0.21	0.17	0.19
55	0.30	0.25	0.24
60	0.49	0.39	0.28

*Notes: 55% of the disability rates shown represent accidental disability.
40% (previously 0%) of the accidental disabilities will die from the same cause as the disability.
55% of the death rates shown represent accidental death.*

SECTION 4: Reporting Information for the City of Holyoke Retirement System

Termination Rates before Retirement (continued):

Group 4 – Rate (%)

Age	Mortality		Disability
	Male	Female	
20	0.03	0.02	0.20
25	0.04	0.02	0.20
30	0.04	0.03	0.30
35	0.08	0.05	0.30
40	0.11	0.07	0.30
45	0.15	0.11	1.00
50	0.21	0.17	1.25
55	0.30	0.25	1.20
60	0.49	0.39	0.85

Notes: 90% of the disability rates shown represent accidental disability.
 40% (previously, 0%) of the accidental disabilities will die from the same cause as the disability.
 90% of the death rates shown represent accidental death.

Withdrawal Rates:

Rate per year (%)

Years of Service	Groups 1 and 2	Years of Service	Group 4
0	15.0	0 – 10	1.5
1	12.0	11+	0.0
2	10.0		
3	9.0		
4	8.0		
5 – 9	7.6		
10 – 14	5.4		
15 – 19	3.3		
20 – 24	2.0		
25 – 29	1.0		
30+	0.0		

SECTION 4: Reporting Information for the City of Holyoke Retirement System

Retirement Rates:

Rate per year (%)

Groups 1 and 2

Age	Male	Female	Group 4
45 – 49	--	--	1.0
50 – 54	1.0	1.5	2.0
55 – 59	2.0	5.5	15.0
60 – 61	12.0	5.0	20.0
62 – 64	30.0	15.0	25.0
65 – 68	40.0	15.0	100.0
69	30.0	20.0	--
70	100.0	100.0	--

Unknown Data for Participants:

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

Age of Spouse:

Female (or male) spouses 3 years younger (or older) than their spouses.

Percent Married:

75%

Net Investment Return:

8.25%, net of both operating and investment expenses

Interest on Employee Contributions:

3.5%

Salary Increases:

Year	Groups 1 and 2	Group 4
2005	3.00%	3.00%
2006	3.00%	3.00%
2007	4.00%	4.00%
2008	4.00%	4.00%
2009	4.00%	4.00%
2010	4.00%	4.00%
2011 and later	4.75%	5.25%

Includes allowance for inflation.

2004 Salary:

2004 salary equal to salary reported in the data.

SECTION 4: Reporting Information for the City of Holyoke Retirement System

Total Service:	Total creditable service reported in the data.
Net 3(8)c Liability:	Assumed \$222,348 in net annual benefits paid to other municipal retirement systems would result in a liability of \$1,643,156.
Actuarial Value of Assets:	Market value of assets less unrecognized return in each of the last four years. Unrecognized return is equal to the difference between the actual market value return and the expected market value return and is recognized over a four-year period, further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant less service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.

SECTION 4: Reporting Information for the City of Holyoke Retirement System

EXHIBIT VI

Summary of Plan Provisions

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

Plan Year: January 1 – December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

The annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average

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annual rate of regular compensation received during the last three years of creditable service prior to retirement. The \$30,000 cap on salary used in a benefit determination for any employee hired after January 1, 1979 has been removed.

The maximum annual amount of the retirement allowance is 80 percent of the member's final three-year average salary. Any member who is a veteran also receives an additional yearly retirement allowance of fifteen dollars per year of creditable service, not exceeding three hundred dollars. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

Employees hired before January 1, 1975 contribute 5 percent of their salary; employees hired after December 31, 1974 and before January 1, 1984 contribute 7 percent; employees hired after January 1, 1984 contribute 8 percent; employees hired after July 1, 1996 contribute 9 percent. In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who leave with less than five years of credited service receive no interest on their contributions and employees who leave with five but less than ten years receive one-half the rate of regular interest otherwise payable.

Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

Members who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the system).

Ordinary Disability Benefits

A member who is unable to perform his job due to a non-occupational disability will receive a retirement allowance if he has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55, based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50

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percent of the member's most recent year's pay plus an annuity based on his own contributions.

Accidental Disability Benefit

For a job-connected disability the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of his death, a spouse's benefit will be paid the full amount the employee would have received under Option C (previously, two-thirds of the amount). The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

"Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman or permanent member of a police department is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an

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additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at his death any of his contributions not expended for annuity payments will be refunded to his beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing his survivor with two-thirds of the lesser amount. Option C pensioners will have their benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

Post-Retirement Benefits

The Board has adopted the provisions of Section 51 Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.